2017

MISSOURI WILD TURKEY HARVEST AND POPULATION STATUS REPORT

Missouri Department of Conservation

Resource Science Division

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POPULATION STATUS

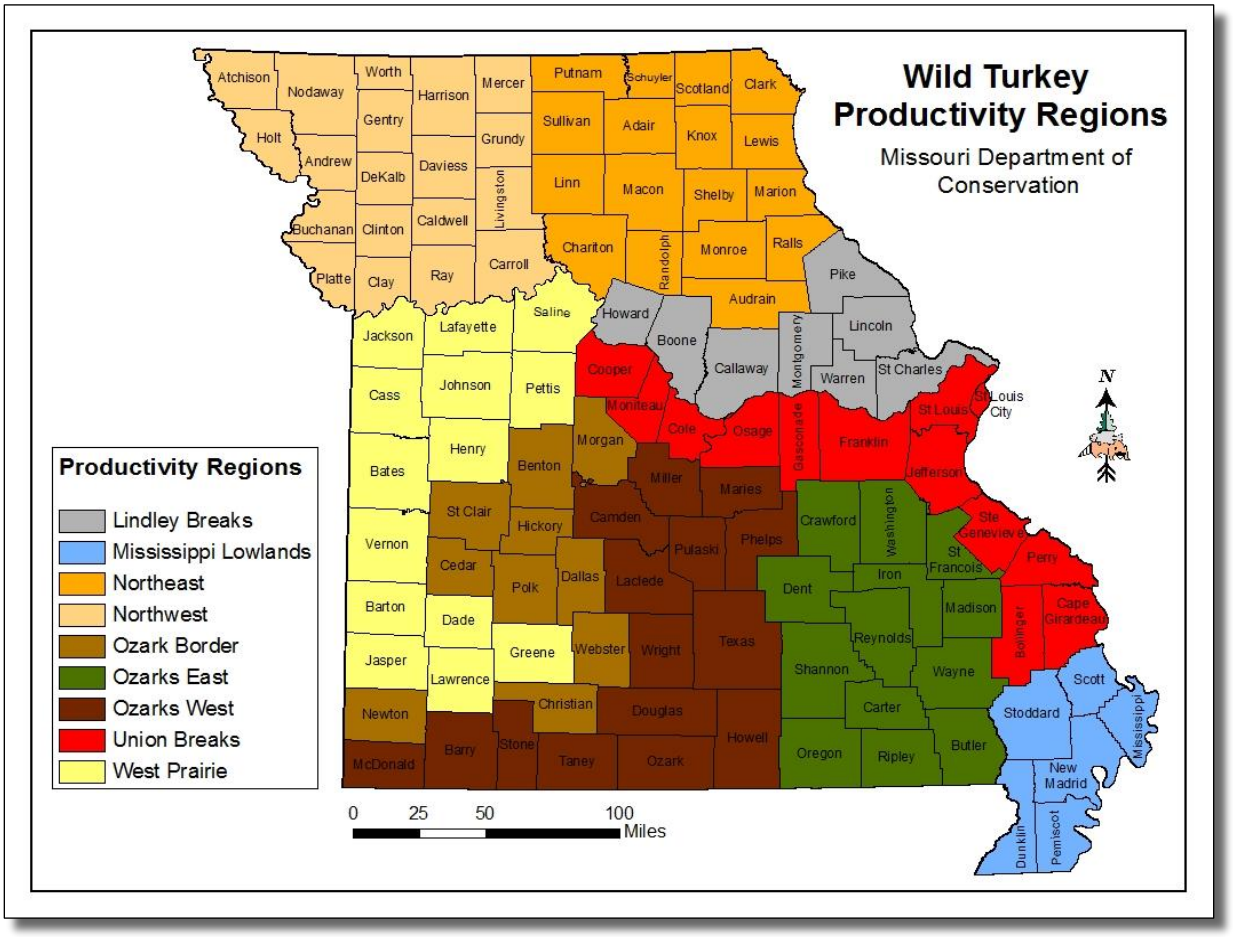
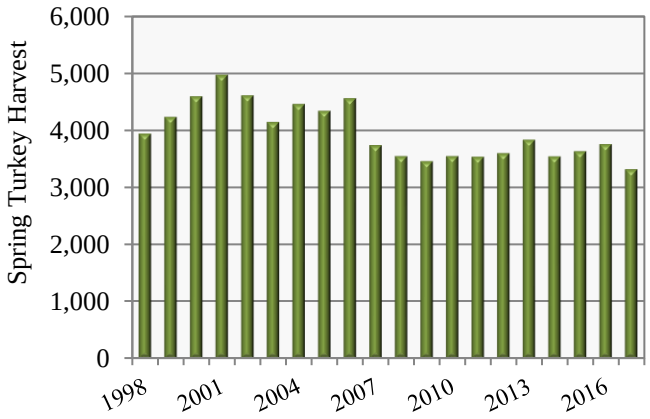


Figure 1. Turkey Productivity Regions in Missouri. Regions consist of counties grouped by similar land cover composition.

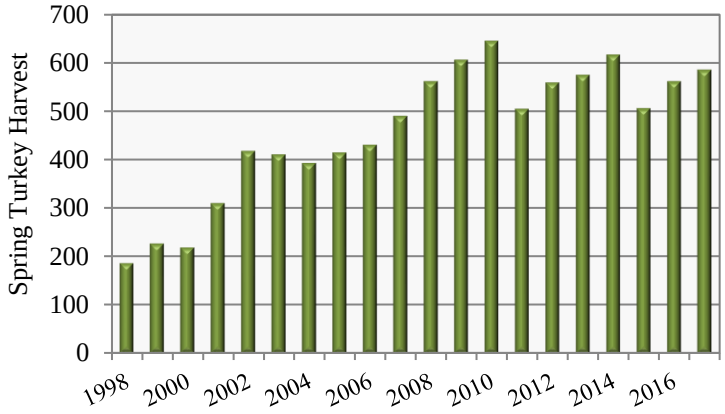
Lindley Breaks Region

Turkey numbers in the Lindley Breaks region (Figure 1) peaked in the early 2000s before declining by approximately 30% from 2001–2009. Improved production has helped to stabilize regional turkey numbers. Spring harvest data indicate that turkey abundance remains about 25–30% below the peak numbers observed more than a decade ago.



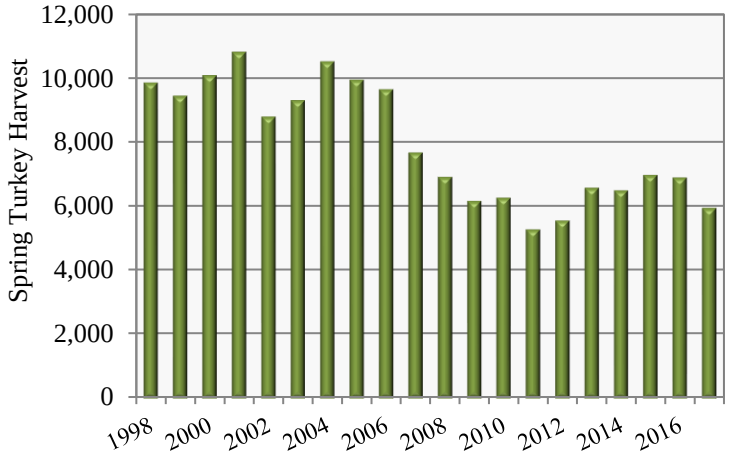
Mississippi Lowlands Region

Turkey numbers in the Mississippi Lowlands region (Figure 1) increased during the 2000s. Turkey habitat within the region is limited, resulting in low harvests compared to other regions. Regional turkey numbers are currently stable based on the five-year spring harvest trend.



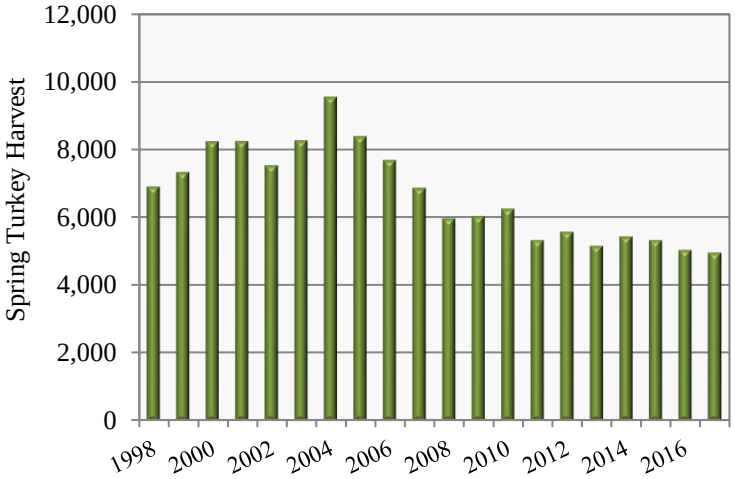
Northeast Region

Six consecutive years of poor production caused turkey numbers in the Northeast region (Figure 1) to decline by approximately 40% during the late 2000s. The five-year spring harvest trend is stable and indicates that turkey numbers remain about 35–40% below those observed from the late 1990s through the mid-2000s.



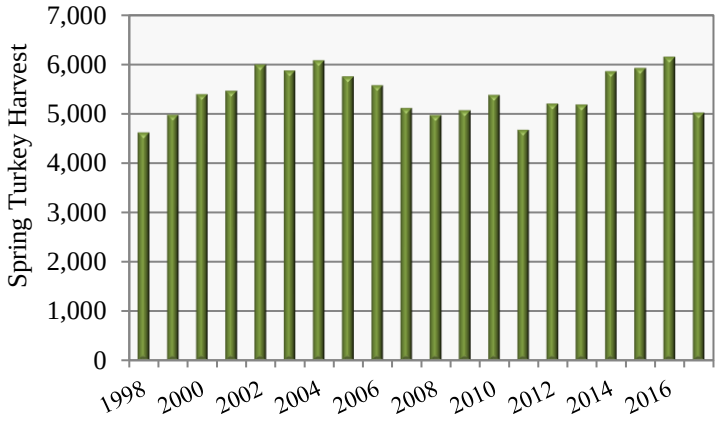
Northwest Region

Similar to the Northeast region, poor production caused turkey numbers to decline sharply in the Northwest region (Figure 1) during the late 2000s. Although regional production has improved and the five-year spring harvest trend is stable, turkey numbers remain about 40–45% below the population peak.



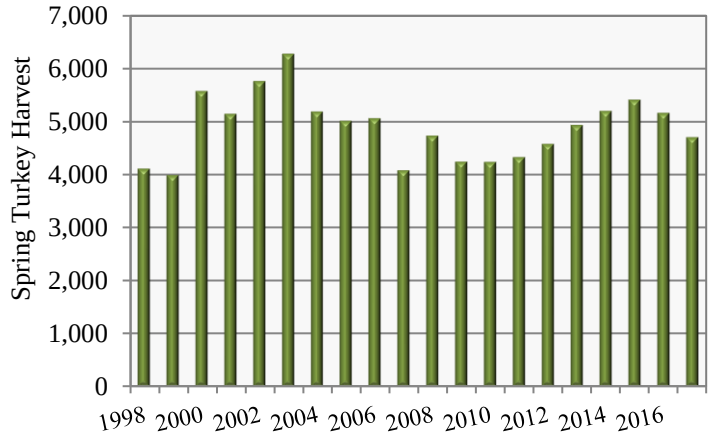
Ozark Border Region

Turkey numbers in the Ozark Border region (Figure 1) peaked in the early 2000s, as they did in most of the state, before declining during the mid-to-late 2000s. Spring harvests within the region increased from 2011–2016 before dropping sharply during 2017.



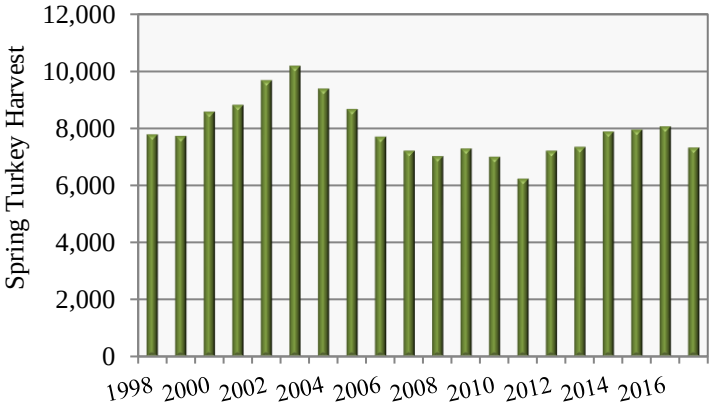
Ozarks East Region

Spring harvest data indicate that turkey numbers in the Ozarks East region (Figure 1) declined during the late 2000s. Following several years of improved production, spring harvests increased sharply from 2011–2015 before declining during the last two years. Spring harvest data indicate that turkey numbers are currently about 15–20% below the population peak that occurred during the early 2000s.



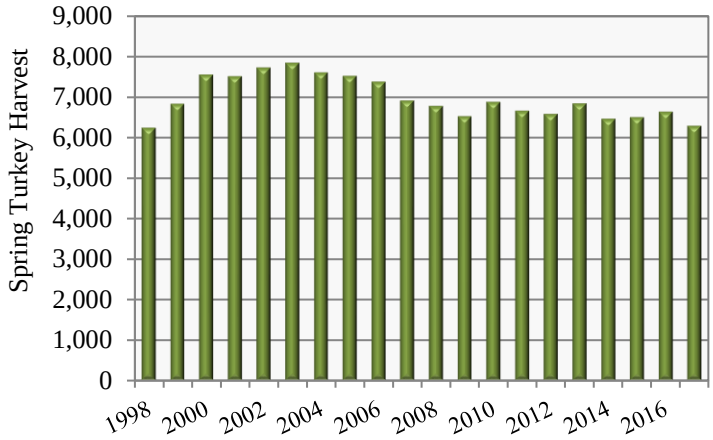
Ozarks West Region

Following a population peak that occurred during the early 2000s, turkey numbers in the Ozarks West region (Figure 1) declined sharply during the mid-to-late 2000s. Improved production resulted in an increasing trend in spring harvest from 2011–2016. The spring harvest was down about 10% in 2017.



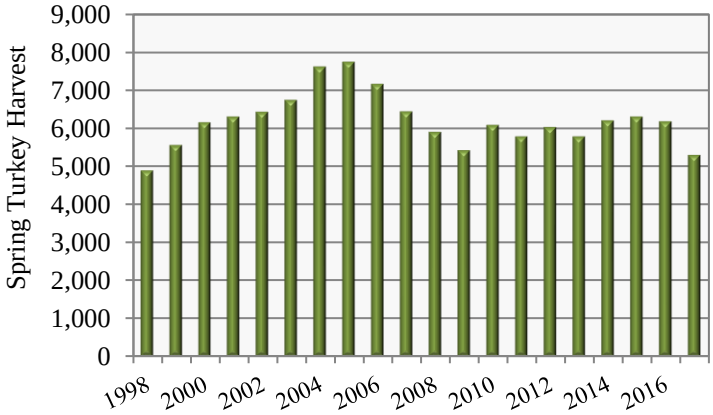
Union Breaks Region

Following a peak in the early 2000s, turkey numbers in the Union Breaks region (Figure 1) declined during the mid-to-2000s. Spring harvest data indicate that turkey numbers have since stabilized. Population numbers remain about 15–20% below peak numbers of the early 2000s.



West Prairie Region

Turkey numbers in the West Prairie region (Figure 1) have been fairly stable for the last five years. Similar to the population trend in the Northwest region, turkey numbers peaked during the early-to-mid 2000s. Regional turkey numbers remain about 20–25% below that population peak.



REPRODUCTION – WILD TURKEY BROOD SURVEY

The Missouri Department of Conservation (MDC) has been conducting a Wild Turkey Brood Survey annually since 1959. During the survey, Department staff and citizen volunteers record observations of hens, poults, and gobblers during June, July, and August. Turkey sightings are recorded on observation cards, which the MDC mails to participants at the beginning of each survey month. By recording observations of hens and poults, survey participants provide information that serves as an index to turkey production. It is through this survey that the MDC determines the success of each year's turkey hatch. Turkey observations are collected at the county-level and analyzed by Turkey Productivity Region (Figure 1), which are counties grouped by similar land cover composition.

After receiving completed survey cards, MDC staff determines the percentage of hens observed with and without poults, as well as the average number of poults per hen for those hens observed with a brood. Observations of hens and poults are used to determine the poult-to-hen ratio (PHR), which is the average number of poults per hen. The PHR includes observations of hens with a brood and those observed without a brood.

In 2017, MDC staff and citizen volunteers recorded observations of over 60,000 turkeys during the three-month survey. At the statewide scale, 27% of hens were observed with a brood (Table 1), which is down from 29% in 2016 and is 33% less than the previous five-year average. The percentage of hens observed with a brood ranged from 20% in the Ozarks West region to 40% in the Mississippi Lowlands region. Statewide, the average brood size was 3.5 poults (Table 1), which was the same as in 2016 and 13% less than the previous five-year average. Average brood size ranged from 3.2 in the Lindley Breaks region to 4.1 in the Mississippi Lowlands region.

The 2017 statewide PHR of 0.8 was the same as the 2016 ratio, 43% less than the previous five-year average, and 39% less than the 10-year average (Table 2). The 2017 PHR was 50% less than the 20-year average. Among Turkey Productivity Regions, PHRs ranged from 0.6 in the Ozarks West and West Prairie to 1.3 in the Northwest (Table 2).

Prior to 2011, Missouri's turkey population had experienced four consecutive years of poor production characterized by low nest success and low poult survival. The average PHR during this period was 1.1. In contrast, the average PHR from 2011–2015 was 1.6, a 45% increase. Despite improvements in production prior to 2016, the statewide PHR during the last two years has been the same as the ratio in 1960, which was the lowest on record since the survey was initiated (Figure 2).

Table 1. Wild Turkey Brood Survey data by Turkey Productivity Region (Figure 1). Data were obtained from Missouri's Wild Turkey Brood Survey conducted in June, July, and August, 2017.

Lindley Breaks	32%	3.2	0.8	0.53
Northeast	35%	3.7	1.1	0.59
Ozark Border	23%	3.5	0.7	0.86
Ozarks West	20%	3.5	0.6	0.82
West Prairie	23%	3.6	0.6	0.78

[a]Statewide totals include observations where Productivity Region was not recorded on the survey form.

Table 2. Index (poult-to-hen ratio) of Missouri turkey production by Turkey Productivity Region (Figure 1). Data were obtained during the 2017 Wild Turkey Brood Survey and are compared to previous years. For each interval value, the percent change indicates how the 2017 index compares to the previous year or the average for periodic intervals.

Lindley Breaks	0.8	-11%	-43%	-42%	-54%
Northeast	1.1	+38%	-20%	-15%	-29%
Ozark Border	0.7	-22%	-47%	-42%	-56%
Ozarks West	0.6	-33%	-57%	-54%	-61%
West Prairie	0.6	-25%	-48%	-44%	-58%

[a]Statewide totals include observations where Productivity Region was not recorded on the survey form.

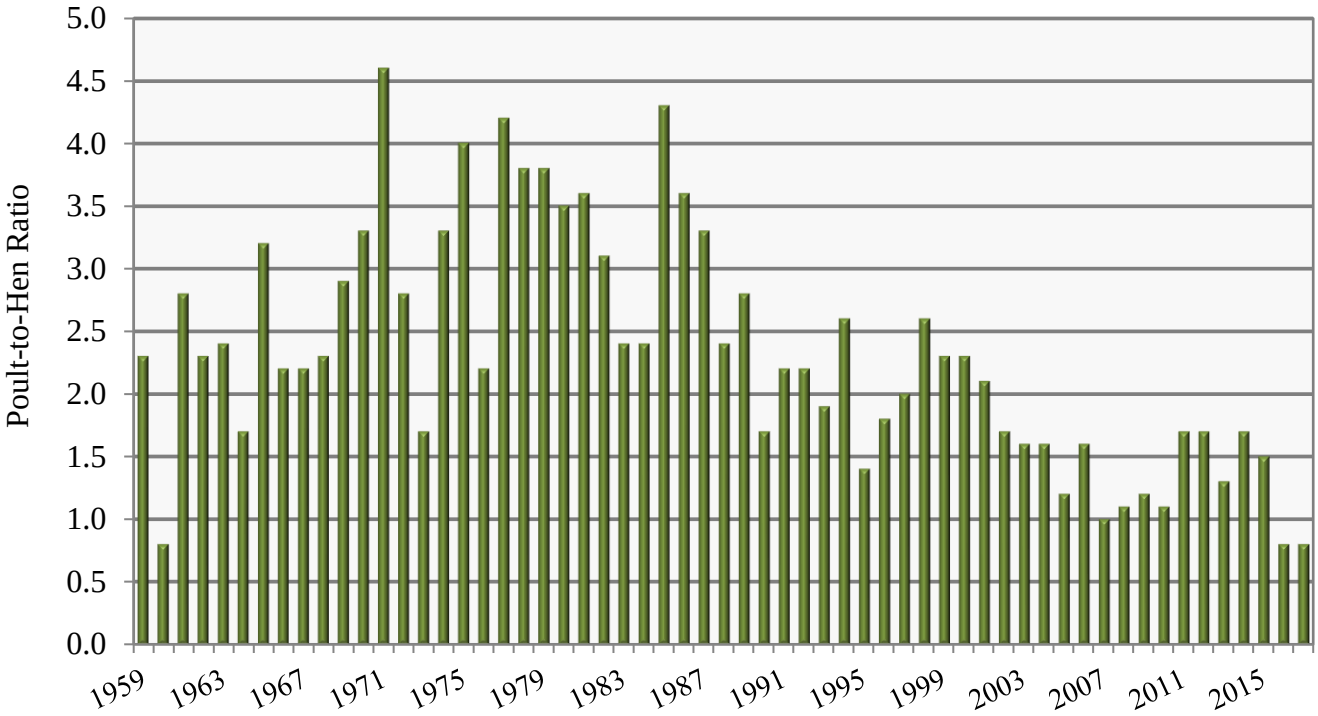


Figure 2. Missouri statewide poult-to-hen ratios derived from the Wild Turkey Brood Survey conducted in June, July, and August, 1959–2017.

HARVEST

2017 Spring Turkey Season

During the 2017 youth spring turkey season, which took place April 8–9, hunters harvested 4,060 turkeys. This harvest total represented a 2% decrease from the 2016 youth season and was 4% less than the previous five-year average. Hunters harvested 39,242 turkeys during the 21-day regular spring turkey season, which occurred April 17 – May 7. The regular season harvest was 11% less than the 2016 harvest.

Juvenile male turkeys represented 12% of the regular season harvest (Figure 3), which was 41% less than the previous five-year average. The total 2017 spring harvest, including both the youth and regular seasons, was 43,343. This harvest total was 10% less than the 2016 harvest total, and was 8% less than the previous five-year average. Counties with the highest total spring harvest were Franklin, Texas, and Callaway, where 1,053, 907, and 789 turkeys were harvested, respectively (Figure 4).

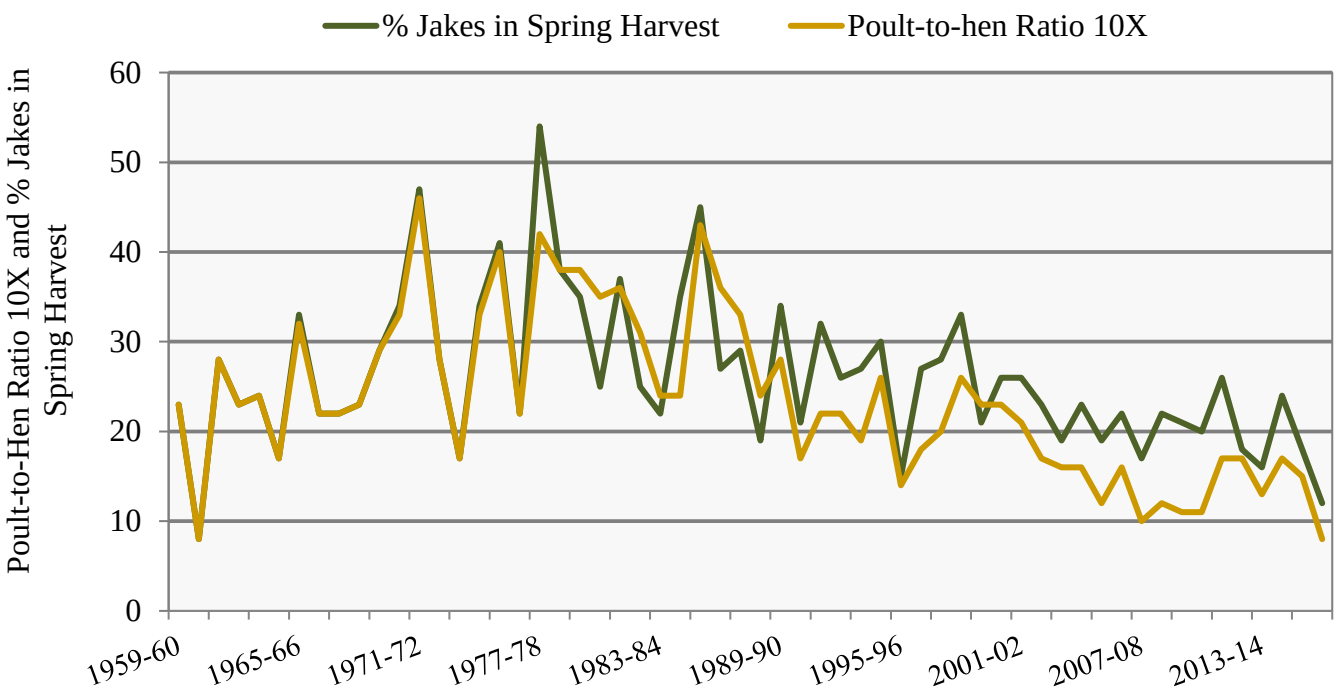


Figure 3. Missouri's statewide poult-to-hen ratio multiplied by 10, compared with the percentage of jakes in the following year's regular season spring harvest, 1959–2017.

Total permit sales for the 2017 spring turkey season (101,213; excluding no-cost landowner permits) were 6% less than in 2016 (Figure 5). Spring turkey permit sales in 2017 included 93,063 (92%) resident permits and 8,150 (8%) non-resident permits. An additional 41,387 no-cost permits were distributed to resident landowners. The total number of spring turkey hunters in Missouri in 2017 was 137,050, which was 5% less than in 2016. The total number of hunters does not equal the permit sales total because some hunters purchase a permit in addition to receiving a no-cost landowner permit.

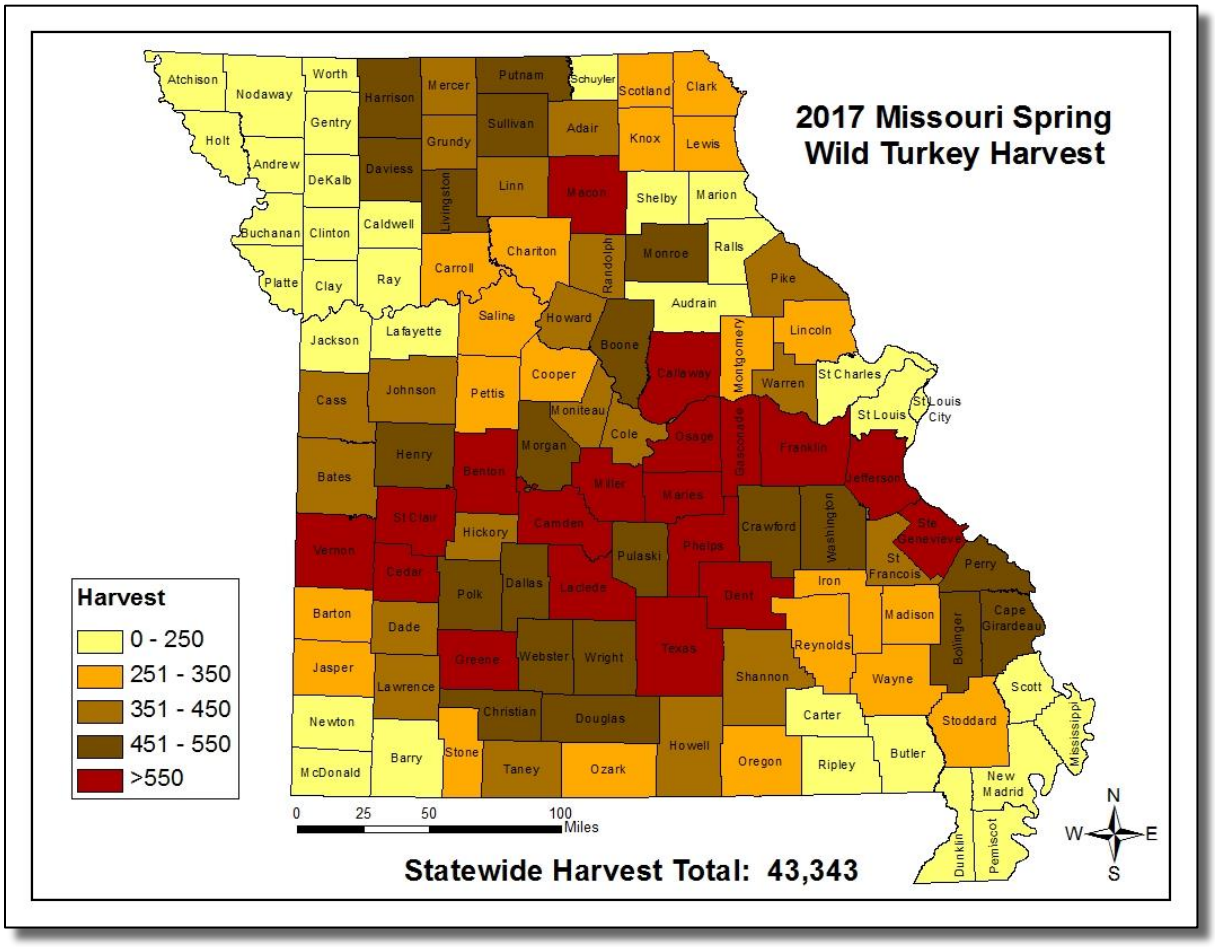


Figure 4. Total (youth and regular season) spring wild turkey harvest in Missouri, 2017.

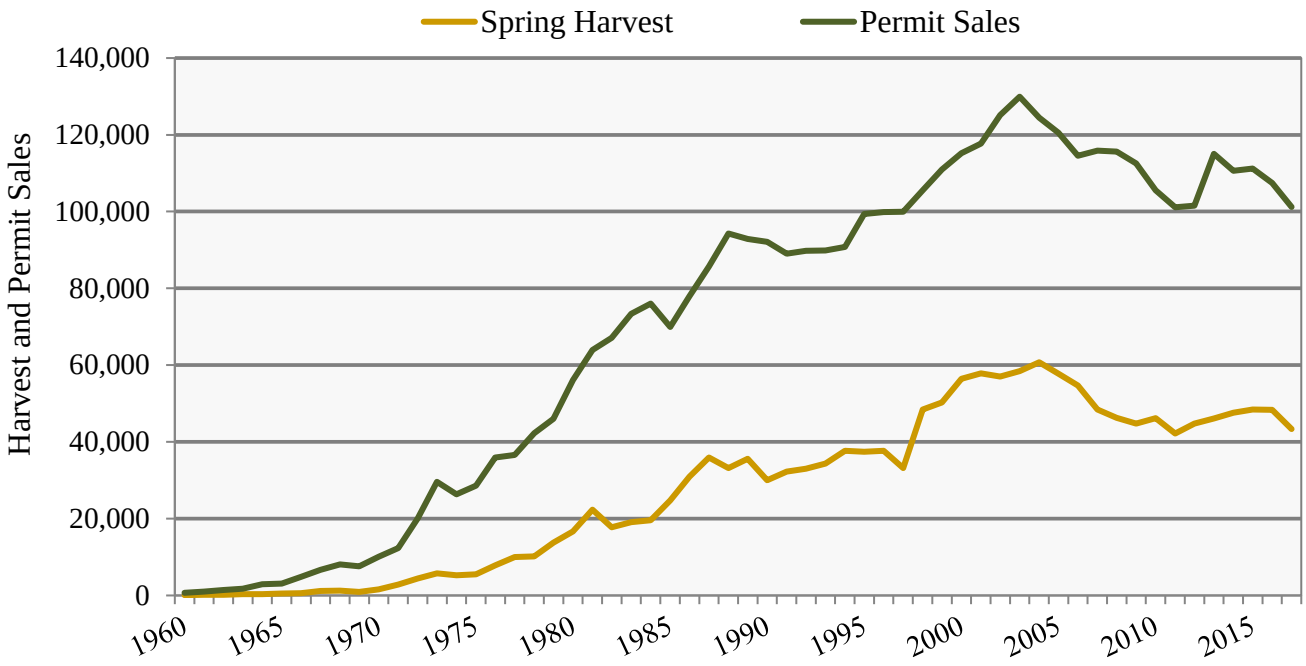


Figure 5. Number of wild turkeys harvested during the spring season (youth and regular season) in Missouri and the number of turkey hunting permits sold for the spring season, 1960–2017. Permit sales do not include no-cost landowner permits.

2017 Fall Firearms Turkey Season

The 2017 fall firearms turkey harvest total of 2,899 was 22% less than the 2016 harvest total and was 52% below the previous five-year average. The majority of the fall firearms harvest occurred in southern Missouri (Figure 6). The top three harvest counties were Greene (100), Texas (95), and Dent (94).

Fall firearms turkey permit sales declined by 12% in 2017. Of the 10,243 permits sold, 9,975 (97%) were purchased by Missouri residents and 268 (3%) by nonresidents. Fall firearms turkey hunting in Missouri has generally been declining in popularity since the late 1980s when over 50,000 permits were sold and more than 28,000 turkeys were harvested during the 14-day season (Figure 7).

Although the novelty of the fall firearms turkey season may have worn off for some of Missouri's hunters, the increasing popularity of the archery deer and turkey season is likely to be partially responsible for the declining interest. Additionally, declining turkey numbers during the mid-to-late 2000s are likely to have reduced hunter participation in the fall season. Missouri is not alone in experiencing a declining trend in fall firearms turkey hunting participation. A number of other states are seeing similar trends.

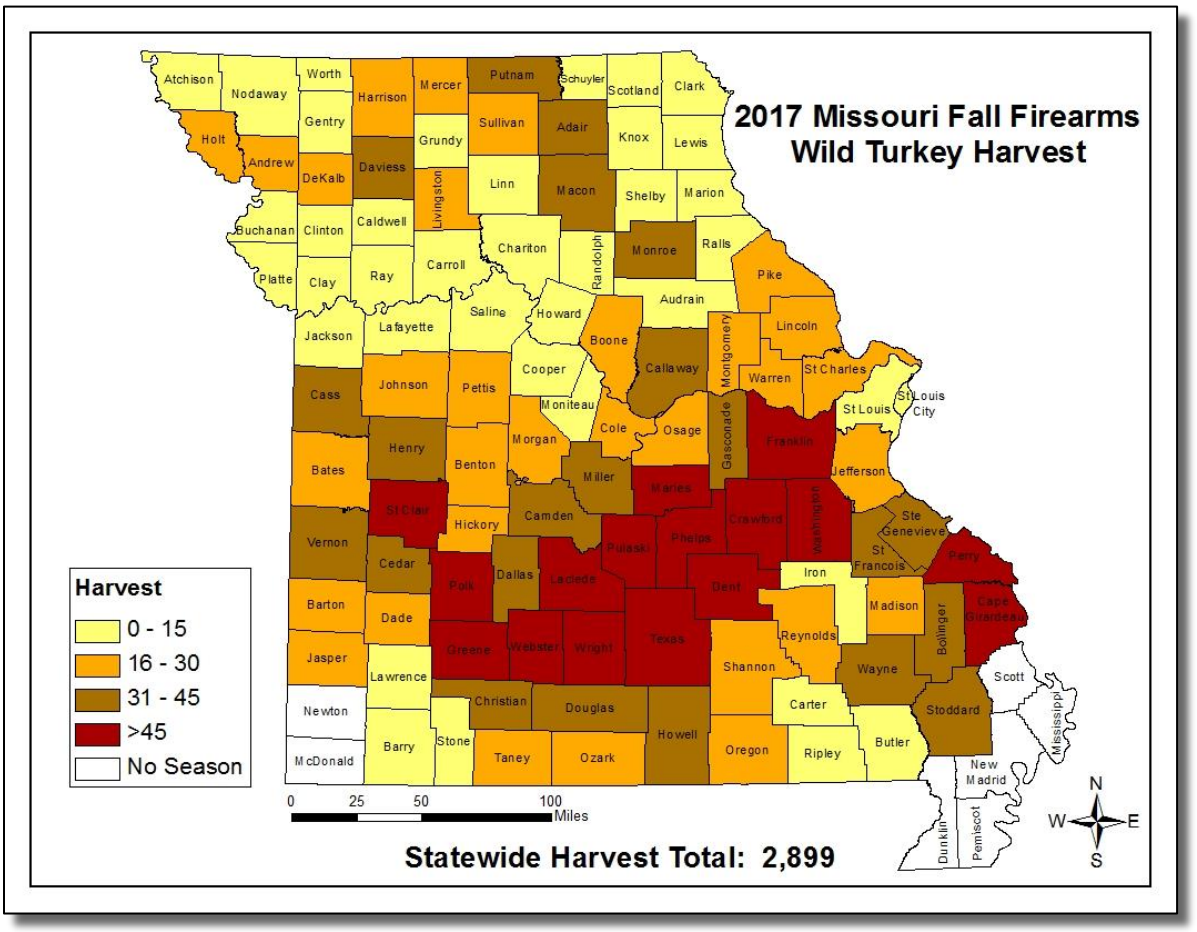


Figure 6. Missouri fall firearms wild turkey harvest, 2017.

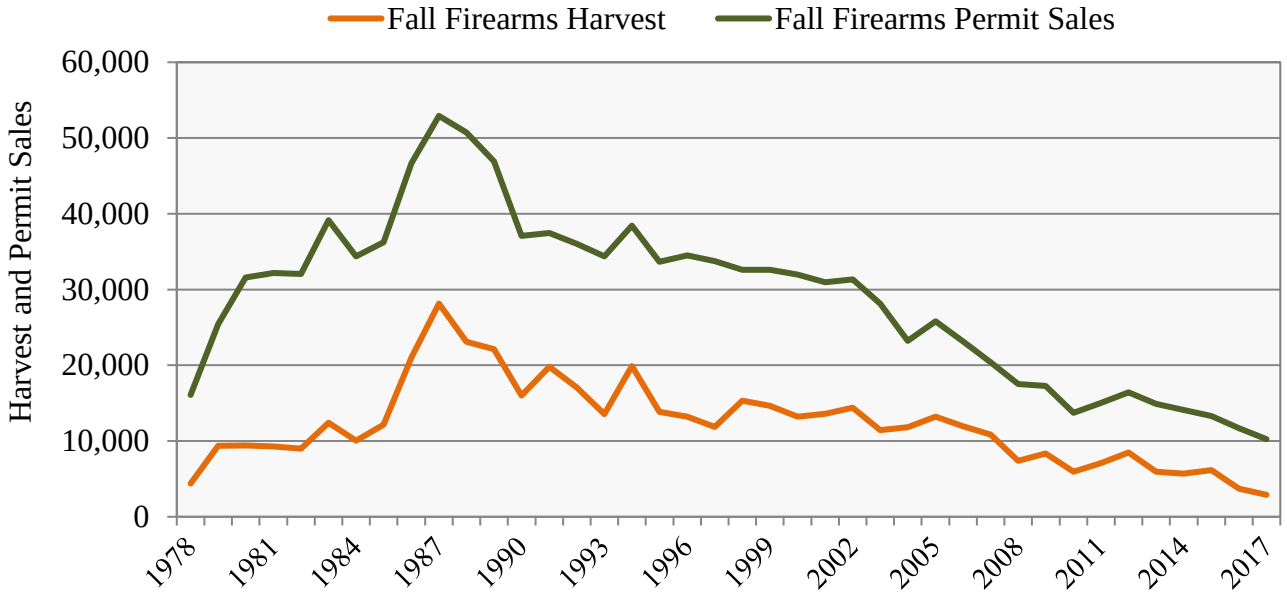


Figure 7. Number of wild turkeys harvested during the fall firearms turkey season in Missouri and the number of fall firearms permits sold, 1978–2017. Permit sales do not include no-cost landowner permits.

2017 Fall Archery Turkey Season

Hunters harvested 2,434 turkeys during the 2017 fall archery deer and turkey season (Figures 8, 9). The 2017 archery turkey harvest total was 6% greater than the 2016 harvest total and was 11% less than the previous five-year average. Unlike the fall firearms turkey harvest, which has shown a declining trend since the late 1980s (Figure 7), the fall archery harvest increased until the mid-2000s. Since 2005, archery turkey harvests have fluctuated substantially on an annual basis, while showing a general trend towards stabilization (Figure 9).

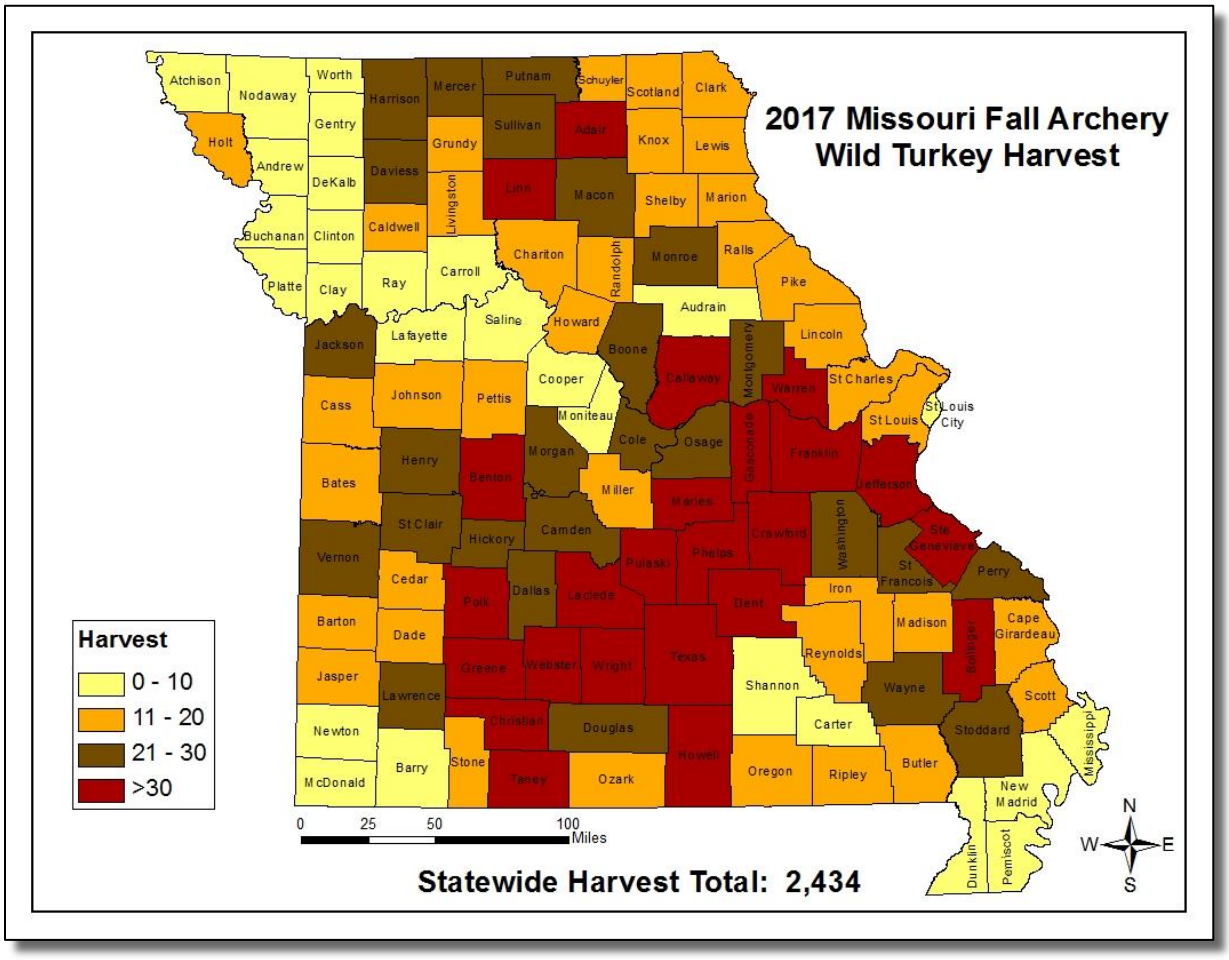


Figure 8. Wild turkey harvest in Missouri during the 2017 fall archery season.

Although archery permit sales were relatively stable from the mid-1990s through the mid-2000s, sales have since shown an increasing trend (Figure 10). In 2017, 122,584 permits were sold; the highest number since the season's inception. Of the archery permits sold in 2017, 111,465 (91%) were purchased by Missouri residents and 11,119 (9%) by non-residents.

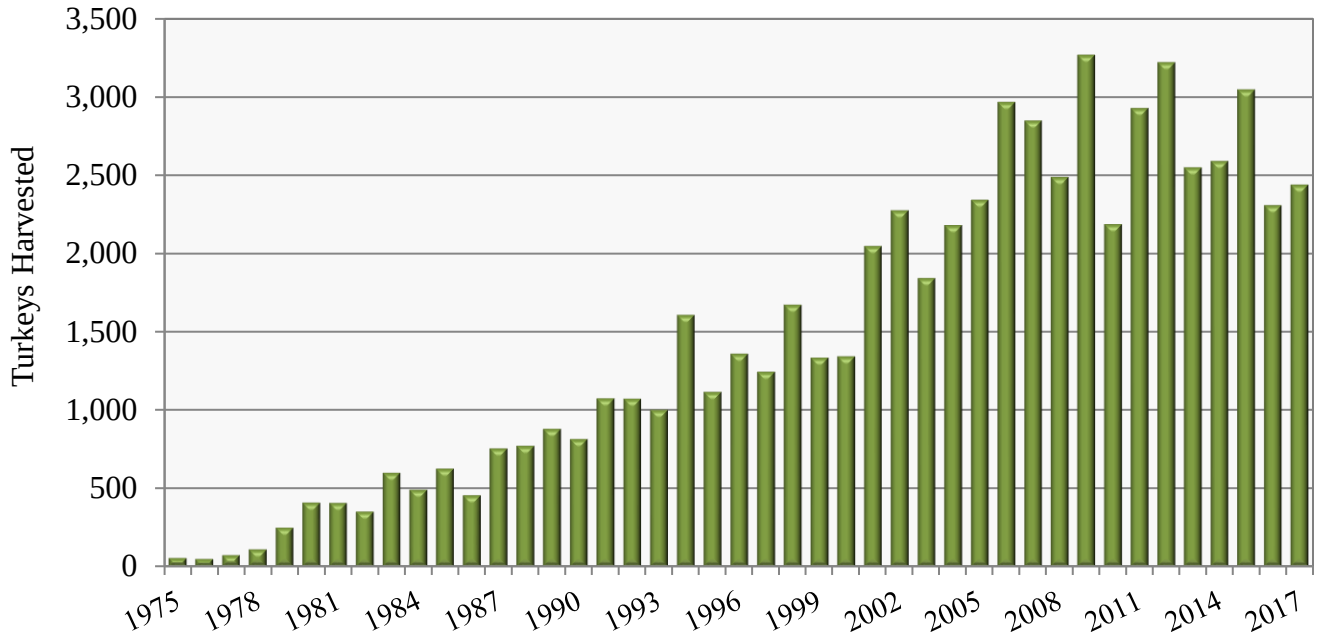


Figure 9. Missouri fall archery wild turkey harvest, 1975–2017.

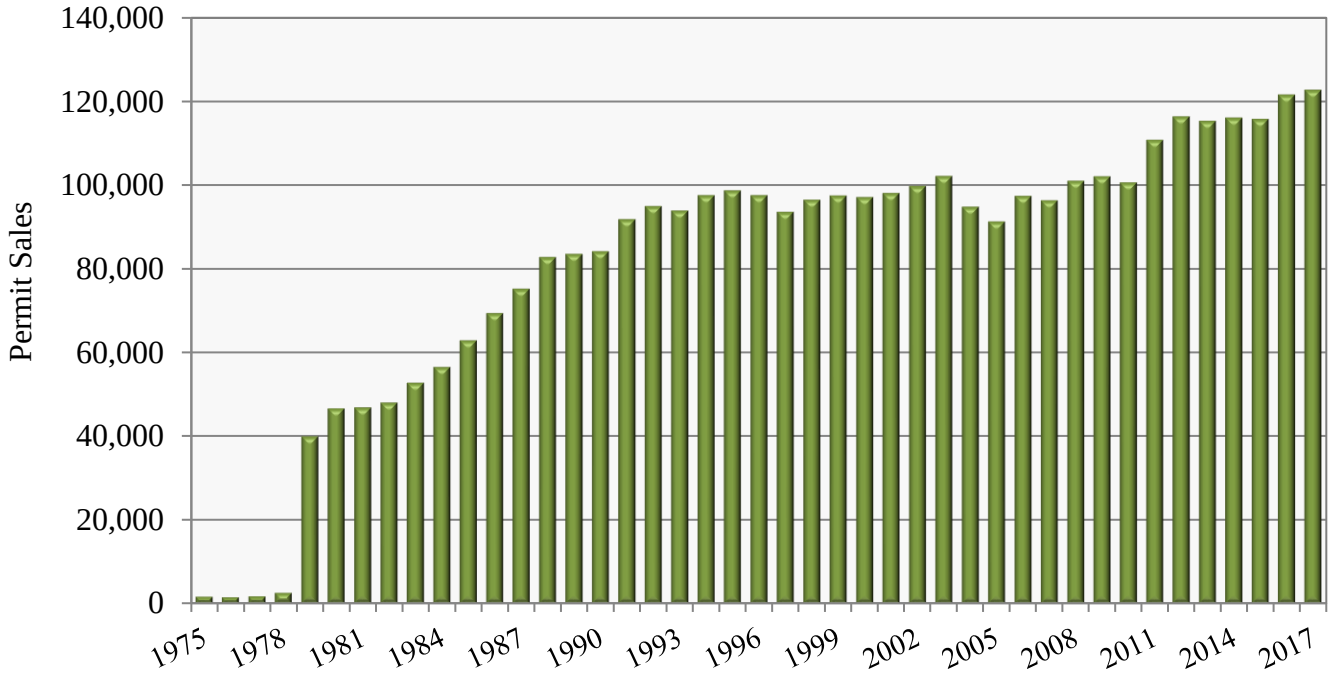


Figure 10. Missouri archery deer and turkey permit sales, 1975–2017. Permit sales do not include no-cost landowner permits. Prior to 1979, hunters purchased archery deer and turkey permits separately.

HUNTING INCIDENTS

There were two non-fatal hunting incidents during the 2017 spring turkey season. The number of spring turkey hunting incidents in Missouri has declined considerably over the course of the last three decades. During the late 1980s, more than 30 incidents occurred annually for every 100,000 permits sold. During the last five hunting seasons, the average number of incidents per 100,000 permits sold is 2.9 (Figure 11).

RECENT REGULATION CHANGES

Other than changes to some conservation area and managed turkey hunts, no turkey hunting regulation changes occurred in 2017.

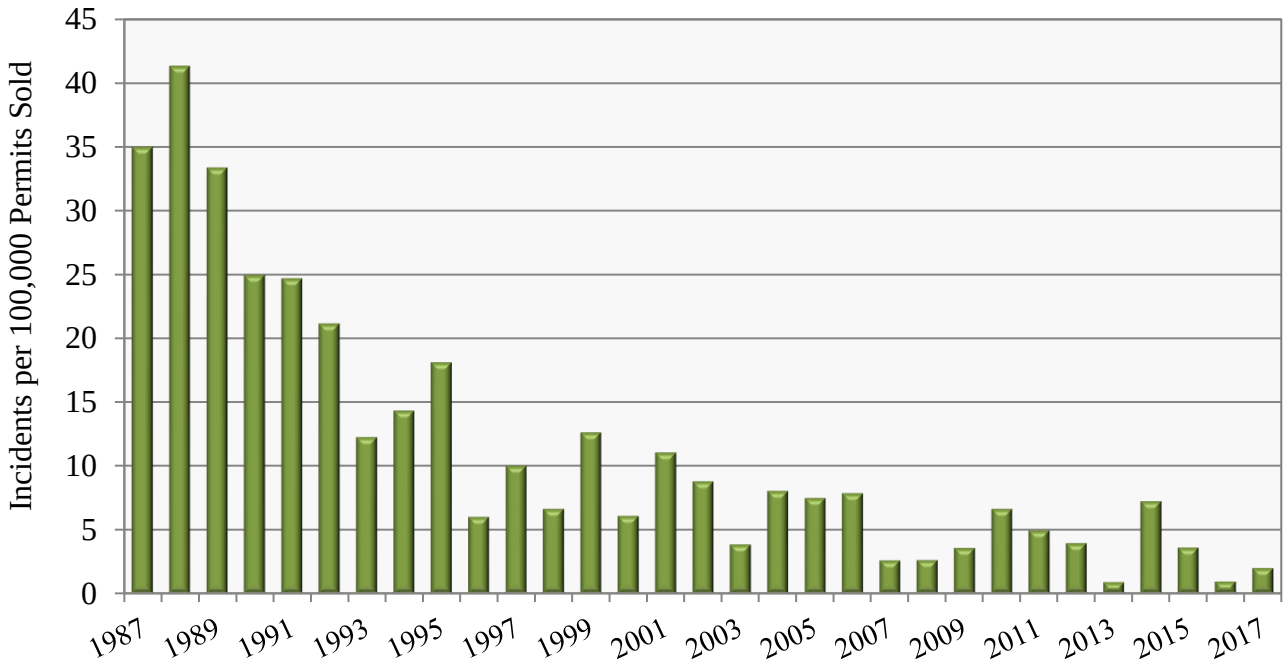


Figure 11. Hunting incidents during the spring turkey season in Missouri per 100,000 permits sold, 1987–2017.

BOWHUNTER OBSERVATION SURVEY

Since 1983, MDC staff and citizen volunteers participating in the MDC's Bowhunter Observation Survey have recorded the number of turkeys observed while archery hunting. Survey participants also record the number of hours they bowhunt and in which county, allowing an index of turkey abundance to be calculated at the statewide and regional scales.

In 2017, at the statewide scale, the number of turkeys observed per 1,000 hours bowhunting was 267 (Figure 12). At the regional scale, index values ranged from 180 in the Mississippi Lowlands to 344 in the Ozarks West (Table 3). The statewide average of 267 was 7% greater than in 2016 and was 23% less than the previous five-year average. The statewide index remains 29% and 47% below the previous 10 and 20-year averages, respectively (Table 3).

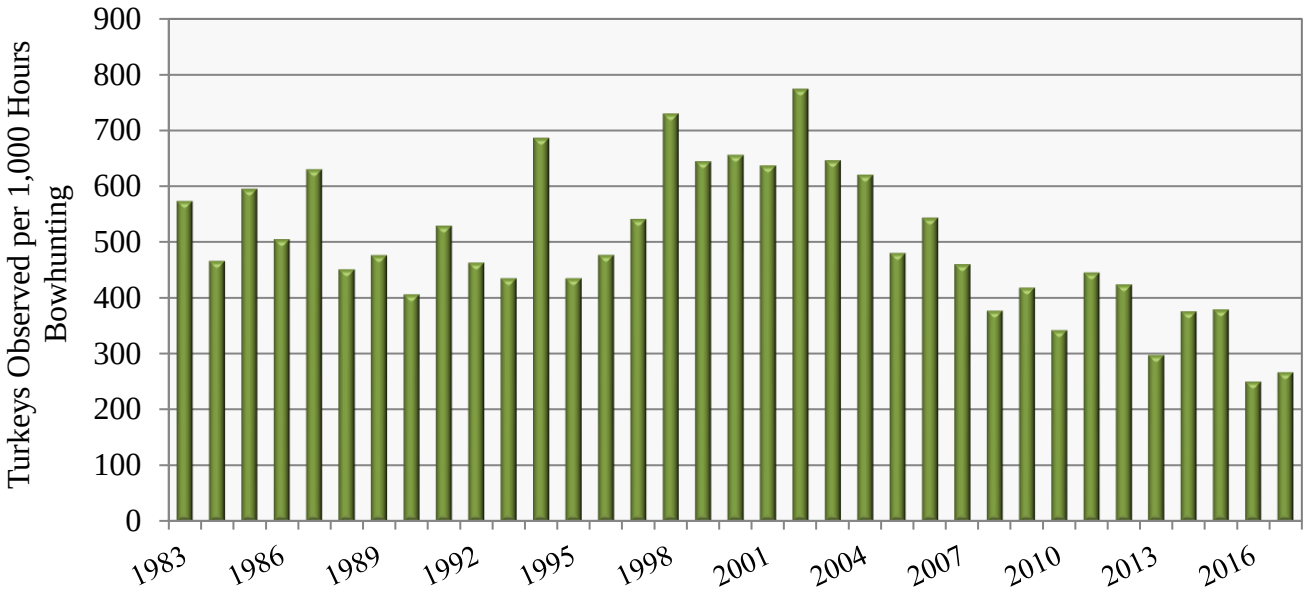


Figure 12. Number of wild turkeys observed during the Missouri Department of Conservation's Bowhunter Observation Survey, 1983–2017. Data are the average number of turkeys observed per 1,000 hours bowhunting at the statewide scale.

Table 3. Index of wild turkey abundance in Missouri by Turkey Productivity Region (Figure 1). Data were obtained from the Conservation Department's Bowhunter Observation Survey. Index values are the average number of turkeys observed per 1,000 hours bowhunting. For each interval value, the % change indicates how the 2017 index compares to the previous year or the average for periodic intervals.

Lindley Breaks	225	+20%	-15%	-25%	-40%
Northeast	257	+8%	-30%	-33%	-57%
Ozark Border	310	-14%	-31%	-25%	-41%
Ozarks West	344	+76%	+9%	+6%	-18%
West Prairie	289	+6%	-29%	-39%	-54%

NORTHEAST MISSOURI WILD TURKEY RESEARCH PROJECT UPDATE

Introduction

In 2013, the MDC began a five-year wild turkey research project in north Missouri in partnership with the University of Missouri and the University of Washington. The study is being conducted in Putnam, Schuyler, Monroe, and Marion Counties. Funding for the project is provided by the MDC and grants from the U.S. Fish and Wildlife Service's Wildlife Restoration Program and the George Clark Missouri State Chapter of the National Wild Turkey Federation. The research project will provide information that will be used by the Conservation Department's Wild Turkey Management Program to monitor the turkey population and assist with making decisions about hunting regulations. The Conservation Department uses a science-based approach to manage the state's wild turkey population and this research project is just one of the many ways that the Department obtains the information used in its program.

The goal of the research project is to develop population models, which will provide annual estimates of turkey population size, survival rates, harvest rates (percentage of the population shot by hunters), recruitment (number of young produced that enter the population), and the growth rate of the turkey population. A computer software program will also be developed to facilitate use of the population models. Researchers capture, band, and radio-tag turkeys throughout the four-county study area. During trapping efforts, all turkeys are released in the same fields where they are captured. The

field-based portion of the research project will provide the Conservation Department with estimates of seasonal and annual survival for adult gobblers, jakes, and hens, as well as harvest rate estimates during the spring and fall hunting seasons.

Fitting wild turkeys with radio-transmitters allows researchers to track the birds and determine survival throughout the year in addition to identifying the various sources of mortality. Of central importance will be determining what percentage of adult gobblers and jakes are harvested during the spring hunting season. To allow harvest rates to be estimated, a toll-free phone number has been inscribed on each turkey band. Should a hunter happen to shoot a banded turkey, in addition to reporting their bird through the Telecheck system, the Conservation Department asks that they call the toll-free number on the band. The information gained from band returns is critically important to the success of the project.

In addition to determining the percentage of adult gobblers and jakes that are harvested during the spring hunting season, researchers will determine what percentage of banded turkeys are harvested during the fall season. Researchers also monitor hens closely during the nesting and brood-rearing seasons. The study will allow researchers to answer some basic questions about turkey reproduction, including: What proportion of hens attempt to nest each year? Does this differ between adult and juvenile hens? What percentage of hens nest successfully? Of those hens that nest successfully, what is the survival rate of their poults? Although previous research projects have shed light on the answers to these questions, brood survey results indicate considerable declines in turkey production since the last turkey research project was conducted in Missouri, and having updated information is important.

Years 1–4 – Project Summary

Researchers captured nearly 1,700 turkeys during the five winter field seasons including 458 males and 1,217 hens. All males were banded and radio-tagged; 160 hens were banded and radio-tagged, and 1,057 hens were marked only with bands.

Annual survival rates of radio-tagged hens have ranged from 50–71%. Spring and summer survival rates have ranged from 81–90% and from 78–92%, respectively. Fall and winter survival rates have ranged from 84–95% and from 86–98%, respectively. Annual survival of adult gobblers (39–46%) was lower than that of hens and jakes (68–79%). Spring survival of adult gobblers and jakes has ranged from 56–69% and from 85–94%, respectively. Survival rates of adult gobblers and jakes during summer have ranged from 85–96% and from 91–100%, respectively. During fall, survival rates of adult gobblers and jakes have ranged from 90–94% and from 89–100%, respectively. Lastly, winter survival rates of adult gobblers and jakes have ranged from 89–98% and from 90–95%, respectively.

Predation was the leading cause of death of female turkeys, accounting for 87% of mortalities where cause could be determined (47 of 54 deaths). Predation was also the leading cause of death of jakes. Of the 96 jakes that died where cause could be determined, 57 (59%) were suspected to have been killed by predators. Hunter harvest has been the leading cause of death for adult gobblers, accounting for 57% of mortalities where cause could be determined (63 of 111 deaths). During the first four years of the project, the percentage of adult gobblers harvested during the spring season has ranged from 15–31%. Not surprisingly, the percentage of jakes harvested during the spring season (0–6%) has been considerably lower than that of adult gobblers. During the first four years of

the project, fall harvest rates of radio-tagged male turkeys have ranged from 0–3%. Fall harvest rates of radio-tagged hens have also ranged from 0–3%. With banding data included, the fall harvest rate of hens over the first four years of the project has been about 1%.

Of the hens radio-tracked during the first four years of the project, the median date of initial nest incubation initiation has ranged from May 7–16. Most radio-tagged adult hens (69–88%) have initiated incubation of at least one nest, whereas only 40–60% of juvenile hens have initiated incubation. Of the adult hens that failed their initial nesting attempt, 30–60% initiated incubation of a second nest. One-third of juvenile hens have renested during the first four years of the study. During years 1–4, the percentage of hens that have been successful at hatching poults (female success) has ranged from 17–33%. Female success has been greater for adult hens (19–33%) than for juvenile hens (0–20%). Average first nest clutch size has ranged from 10–12 eggs, respectively. Of the eggs laid in successful nests, the percentage that have hatched has ranged from 82–97%. Poult survival has ranged from 6–47%.

Appendix A. 2017 Missouri spring turkey harvest (youth and regular seasons combined).

Adair	394	47	8	449	41
Atchison	120	15	0	135	104
Barry	143	21	3	167	100
Bates	344	37	4	385	52
Bollinger	380	97	8	485	34
Buchanan	111	13	2	126	105
Caldwell	196	26	2	224	90
Camden	547	81	10	638	14
Carroll	311	24	0	335	63
Cass	300	66	2	368	56
Chariton	268	27	0	295	72
Clark	275	39	4	318	67
Clinton	92	19	1	112	107
Cooper	243	25	4	272	78
Dade	291	55	11	357	59
Daviess	477	46	2	525	22
Dent	607	63	8	678	8
Dunklin	12	2	0	14	114

[a]Rank based on total harvest in Missouri's 114 counties.

Appendix A. Continued.

County	Adult Males	Juvenile Males	Bearded Hens	Total	Rank[a]
Gasconade	560	82	4	646	13
Gentry	156	25	3	184	98
Greene	574	118	8	700	6
Grundy	357	31	5	393	49
Harrison	430	33	3	466	38
Henry	445	87	9	541	21
Hickory	389	41	6	436	43
Holt	217	19	2	238	85
Howard	330	38	6	374	54
Howell	362	67	2	431	44
Iron	248	46	2	296	71
Jackson	178	26	2	206	95
Jasper	237	74	7	318	68
Jefferson	497	72	6	575	17
Johnson	352	53	0	405	47
Knox	245	25	1	271	79
Laclede	590	126	15	731	5
Lafayette	175	35	2	212	94
Lawrence	277	70	14	361	58
Lewis	250	29	3	282	77
Lincoln	252	60	7	319	66
Linn	347	43	5	395	48
Livingston	420	43	3	466	39
Macon	555	81	11	647	11
Madison	230	49	5	284	76
Maries	461	90	10	561	19
Marion	206	32	3	241	84
McDonald	67	17	0	84	110
Mercer	403	39	3	445	42
Miller	526	66	5	597	15
Mississippi	45	11	0	56	112
Moniteau	312	32	10	354	60
Monroe	445	62	5	512	26
Montgomery	262	65	5	332	65
Morgan	456	38	7	501	29
New Madrid	50	13	0	63	111

[a]Rank based on total harvest in Missouri's 114 counties.

Appendix A. Continued.

County	Adult Males	Juvenile Males	Bearded Hens	Total	Rank[a]
Newton	110	33	3	146	102
Nodaway	169	31	3	203	96
Oregon	268	75	5	348	61
Osage	641	90	8	739	4
Ozark	241	40	5	286	74
Pemiscot	25	12	0	37	113
Perry	403	78	7	488	32
Pettis	256	27	2	285	75
Phelps	590	66	7	663	10
Pike	339	44	5	388	50
Platte	215	10	3	228	89
Polk	442	75	5	522	24
Pulaski	460	48	10	518	25
Putnam	417	54	4	475	37
Ralls	201	26	4	231	88
Randolph	331	36	3	370	55
Ray	199	21	2	222	91
Reynolds	280	31	4	315	69
Ripley	207	39	1	247	82
Saint Charles	196	47	3	246	83
Saint Clair	601	80	17	698	7
Saint Francois	342	44	1	387	51
Saint Louis	79	22	1	102	109
Sainte Genevieve	591	83	4	678	9
Saline	215	44	4	263	80
Schuyler	191	24	0	215	92
Scotland	274	35	5	314	70
Scott	131	24	1	156	101
Shannon	385	37	1	423	45
Shelby	190	23	2	215	93
Stoddard	199	56	5	260	81
Stone	254	34	5	293	73
Sullivan	420	31	5	456	40
Taney	354	56	7	417	46
Texas	796	105	6	907	2
Vernon	463	91	14	568	18

[a]Rank based on total harvest in Missouri's 114 counties.

Appendix A. Continued.

County	Adult Males	Juvenile Males	Bearded Hens	Total	Rank[a]
Warren	298	66	4	368	57
Washington	424	46	10	480	36
Wayne	265	66	7	338	62
Webster	413	77	10	500	30
Worth	115	10	0	125	106
Wright	459	75	9	543	20
Totals	**37,191**	**5,596**	**556**	**43,343**	

[a]Rank based on total harvest in Missouri's 114 counties.

Appendix B. 2017 Missouri fall turkey harvest (firearms and archery seasons combined).

County	Adult Males	Adult Females	Juvenile Males	Juvenile Females	Total	Rank[a]
Adair	13	20	7	26	66	26
Andrew	4	11	2	5	22	85
Atchison	4	5	4	1	14	98
Audrain	3	9	0	10	22	86
Barry	1	3	1	0	5	109
Barton	11	10	5	8	34	64
Bates	11	11	4	9	35	63
Benton	19	16	10	9	54	42
Bollinger	19	27	10	20	76	20
Boone	12	19	8	15	54	43
Buchanan	3	0	2	2	7	108
Butler	5	10	1	5	21	89
Caldwell	6	10	7	7	30	68
Callaway	28	22	12	16	78	16
Camden	15	28	9	15	67	24
Cape Girardeau	16	23	6	19	64	30
Carroll	3	2	1	5	11	99
Carter	2	4	4	5	15	97
Cass	4	26	11	19	60	35
Cedar	19	19	8	13	59	36
Chariton	7	6	3	7	23	82
Christian	32	24	13	9	78	17
Clark	7	7	5	7	26	75
Clay	4	4	1	0	9	104
Clinton	2	1	2	4	9	105
Cole	16	14	6	17	53	45
Cooper	4	4	0	3	11	100
Crawford	22	30	19	30	101	8
Dade	13	11	5	13	42	54
Dallas	22	21	9	19	71	22
Daviess	14	20	10	21	65	29
DeKalb	6	9	7	3	25	77
Dent	40	44	18	44	146	4
Douglas	18	14	14	13	59	37
Dunklin	0	0	0	0	0	114

[a]Rank based on total harvest in Missouri's 114 counties.

Appendix B. Continued.

County	Adult Males	Adult Females	Juvenile Males	Juvenile Females	Total	Rank[a]
Franklin	18	41	21	41	121	6
Gasconade	26	28	7	18	79	15
Gentry	1	8	3	4	16	95
Greene	59	45	15	38	157	2
Grundy	8	7	8	7	30	69
Harrison	11	20	8	10	49	47
Henry	19	17	10	20	66	27
Hickory	16	18	2	12	48	48
Holt	5	15	2	7	29	70
Howard	4	9	2	7	22	87
Howell	31	27	9	11	78	18
Iron	6	5	3	12	26	76
Jackson	15	14	1	6	36	60
Jasper	16	5	5	10	36	61
Jefferson	15	27	6	13	61	34
Johnson	13	18	3	11	45	52
Knox	5	9	2	8	24	79
Laclede	41	33	14	39	127	5
Lafayette	7	13	0	3	23	83
Lawrence	15	12	3	8	38	58
Lewis	8	8	1	7	24	80
Lincoln	12	12	4	14	42	55
Linn	10	10	6	20	46	50
Livingston	8	8	6	15	37	59
Macon	17	15	5	32	69	23
Madison	11	8	8	15	42	56
Maries	21	27	13	38	99	9
Marion	6	7	0	5	18	93
McDonald	0	1	0	2	3	112
Mercer	14	14	1	17	46	51
Miller	11	16	9	19	55	40
Mississippi	0	4	0	0	4	110
Moniteau	6	7	1	7	21	90
Monroe	24	16	7	11	58	38
Montgomery	16	21	6	11	54	44

[a]Rank based on total harvest in Missouri's 114 counties.

Appendix B. Continued.

County	Adult Males	Adult Females	Juvenile Males	Juvenile Females	Total	Rank[a]
Morgan	13	18	4	12	47	49
New Madrid	4	3	0	1	8	106
Newton	4	3	1	0	8	107
Nodaway	1	4	2	3	10	102
Oregon	15	6	9	4	34	65
Osage	12	23	9	11	55	41
Ozark	11	11	3	11	36	62
Pemiscot	1	1	1	0	3	113
Perry	16	34	6	22	78	19
Pettis	5	8	5	11	29	71
Phelps	45	50	19	40	154	3
Pike	6	9	6	8	29	72
Platte	6	9	0	4	19	91
Polk	24	23	7	29	83	12
Pulaski	31	32	9	23	95	11
Putnam	17	12	16	17	62	33
Ralls	9	7	2	5	23	84
Randolph	14	7	4	8	33	67
Ray	0	11	2	4	17	94
Reynolds	5	8	8	13	34	66
Ripley	6	4	1	5	16	96
Saint Charles	8	27	2	7	44	53
Saint Clair	41	13	11	15	80	13
Saint Francois	11	22	8	25	66	28
Saint Louis	7	5	0	7	19	92
Sainte Genevieve	16	33	10	17	76	21
Saline	1	6	0	3	10	103
Schuyler	11	6	3	4	24	81
Scotland	5	8	5	7	25	78
Scott	4	4	1	2	11	101
Shannon	7	4	3	15	29	73
Shelby	2	11	4	11	28	74
Stoddard	13	18	9	23	63	32
Stone	8	8	3	3	22	88
Sullivan	9	12	7	13	41	57

[a]Rank based on total harvest in Missouri's 114 counties.

Appendix B. Continued.

County	Adult Males	Adult Females	Juvenile Males	Juvenile Females	Total	Rank[a]
Taney	23	14	6	9	52	46
Texas	40	50	19	49	158	1
Vernon	15	15	14	14	58	39
Warren	12	19	7	26	64	31
Washington	22	20	8	30	80	14
Wayne	23	23	6	15	67	25
Webster	29	32	11	26	98	10
Worth	2	1	1	0	4	111
Wright	32	26	14	31	103	7
Totals	**1,486**	**1,689**	**681**	**1,480**	**5,336**	

[a]Rank based on total harvest in Missouri's 114 counties.

Missouri Department of Conservation